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Tricare: A Comparison of Self-Reported and Administrative Utilization Data

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As part of the Tricare-Tidewater evaluation, CNA fielded a military beneficiary health care survey in the fall of 1992 to collect information on access, satisfaction, health status, and utilization. To supplement these data, and support the Tricare evaluation, we developed an administrative data set using claims data from the Civilian Health and Medical Program for the Uniformed Services (CHAMPUS), Biometrics records, and Medical Expense and Performance Reporting System (MEPRS) data. This administrative data set provides not only cost information but also detailed utilization records, including information about specific diagnoses and treatments. We undertook this effort to determine what data we should rely on.

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Introduction

As part of the Tricare-Tidewater evaluation, CNA fielded a military beneficiary health care survey in the fall of 1992. The purpose was to collect information on access, satisfaction, health status, and utilization. To supplement these data, and support the Tricare evaluation, we developed an administrative data set using claims data from the Civilian Health and Medical Program for the Uniformed Services (CHAMPUS), Biometrics records, and Medical Expense and Performance Reporting System (MEPRS) data. This administrative data set provides not only cost information but also detailed utilization records, including information about specific diagnoses and treatments.

While working with the survey data, we observed internal inconsistencies in how people responded to the utilization section of the survey. These inconsistencies raised concerns about the veracity of the self-reported use measures. Given these concerns and the unique opportunity of having both survey and administrative measures of use for the same population, we thought it was appropriate to attempt to validate the self-reported utilization data against administrative records.

In this paper, we compare the self-reported utilization data to the corresponding administrative utilization data, created from the CHAMPUS Quick Response Data File (QRDF) and Biometrics records, for a subset of our survey respondents. We look at incidences of overreporting and underreporting use in the survey data, and we attempt to explain these occurrences and the impact of this misreporting on aggregate and individual-level analysis performed with the survey data.

We undertook this effort to determine—for the purposes of the Tricare evaluation—which source of utilization data we should rely on when both survey and administrative data are available. But, this analysis has broader implications for any study of the Military Health Services System

(MHSS) that relies on self-reported utilization data collected through a mail-out/mail-in survey.

Methods

People both over- and underreport their health care use. That is, some people claim they used health care services in the last 6 months, but we find no administrative records that such care was received. We refer to this as overreporting. Others fail to report using health care services, yet we find administrative records showing that they received care. This is underreporting.

We attempt to identify the percentage of eligible respondents who misreported their health care use—admission to a civilian or military hospital and outpatient visits to a civilian facility. At this time, administrative data provide information on civilian inpatient and outpatient care (CHAMPUS QRDF) and military treatment facility (MTF) inpatient care (Biometrics records). There is no equivalent individual-level data source for MTF outpatient care.[1]

In addition, we adjust admission overreporting rates to compensate for instances where we believe the respondent was admitted to the hospital, but the care did not show up in our administrative data set. For example, if a respondent was admitted to a civilian hospital, and he or she did not submit a claim for that care to CHAMPUS, our administrative data would not contain a claim record to validate the admission. Also, if a respondent had been admitted to an MTF other than one of the nine in our Tricare evaluation sample, the care would not show up in our administrative data set. We attempt to account for these cases when we calculate the *adjusted* overreporting rates.

Findings

As we expected, we found that inpatient interaction with the health care system in a 6-month period is a fairly rare event. For example, less than 6 percent of the 1,033 CHAMPUS-eligible respondents

1. The Composite Health Care System (CHCS) will eventually provide this information.

reported having had a stay in a civilian hospital in the past 6 months. Therefore, while we found that misreporting of civilian and military admissions represents a small percentage of the overall sample (e.g., 1.8 percent of CHAMPUS-eligible respondents overreported having had a civilian admission), the misreporting represents a significant proportion of the total admissions that the sample claimed to have had in the past 6 months. We estimate that:

- 32 percent of those reporting nights in a civilian hospital are reporting care they did not receive.
- 25 percent of those reporting nights in a military hospital are reporting care they did not receive.[2]
- As many as 46 percent of those reporting an office/clinic or emergency room visit to a civilian facility may be reporting care they did not receive.[3]

In addition, of those we know had a civilian admission (based on administrative records), 27 percent claimed not to have spent a night in a civilian hospital. Nineteen percent of those with a Biometrics record for an MTF admission claimed not to have had one. And, as many as 38 percent of those with CHAMPUS records for outpatient care claimed not to have had a visit to a civilian facility during this time period.

Conclusions

Although survey data are essential for providing personal information regarding health status, as well as family and demographic information, there is some doubt as to whether we can rely on people to report historical health care use accurately on a mail-out/mail-in survey. Our analysis shows that:

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2. Based on different assumptions regarding who was likely to have actually received care out of the region, we calculated a range of adjusted overreporting rates for military admissions. This represents our most conservative estimate.
3. Overreporting rates for civilian visits were not adjusted. Therefore, 46 percent of those who reported a civilian visit did not have a CHAMPUS claim for care. Some of these respondents may not have filed a claim for this care.

- Misreporting is prevalent throughout the self-reported measures of health care use.
- Respondents overreported health care more frequently than they underreported it—regardless of the type of care being measured.

These are points of concern because misreporting introduces both noise and potential bias. This poses serious problems for using these data at the individual level, such as in regression analysis, to build behavioral models of health care use. The problems of noise and potential bias are somewhat less acute for aggregate analysis because the under- and overreporting tend to counterbalance in the aggregate. However, even in aggregate analysis, noise reduces estimate precision, and misreporting can bias estimates.

The administrative data have their disadvantages as well. These data let us see only a slice of MHSS beneficiaries' health care utilization. But, while we miss some information, we know with a fair amount of certainty what we are missing and what we have. Specifically, what we have captured with the administrative data is the utilization paid for by DOD, either through CHAMPUS or the direct health care system.

Another benefit of the administrative data is that we have consistent definitions of an admission, a visit, outpatient surgery, nonvisit services, and so on. Using survey data, we have to rely on each respondent's personal definition of these services. These may vary significantly, leaving us with no standard definition or measure of a visit or admission. This may lead to erroneous conclusions regarding levels of services delivered and the costs associated with those services.

Given the large percentage of misreporting on the survey, we have decided to measure health care use from the administrative data whenever possible in future Tricare evaluation work.[4] More broadly, these findings raise questions about the appropriateness of relying on mail-out/mail-in surveys, without personal interviewing, to measure health care use when administrative data are available.

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4. Recall that there are no administrative records for MTF outpatient visits, nor are there data available for non-CHAMPUS civilian care. To say anything about these types of care, we will have to use the survey data.

Background

The Tricare program

In October 1992, the Office of the Assistant Secretary of Defense, Health Affairs (OASD(HA)), designated the Tidewater area of Virginia as the demonstration site for Tricare.[5] Tricare is a triservice managed-care initiative, designed to enhance military beneficiaries' access to care, improve mechanisms for quality assurance, control rising costs, and increase coordination between the military and civilian components of the Military Health Services System (MHSS). To achieve the program's objectives, and ensure the most efficient use of military medical treatment facilities (MTFs), the plan—when fully implemented—will offer beneficiaries three health care options:

- Tricare Standard—the standard CHAMPUS benefits plan.
- Tricare Extra—a network of preferred providers. On a case-by-case basis, beneficiaries may choose to use the preferred providers' network and reduce their level of cost sharing.
- Tricare Prime—a managed-care option centered on the MTF and supplemented by a network of civilian providers. Enrolled beneficiaries will be guaranteed access and will receive increased coverage. Except for emergency care, enrollees must obtain all primary care from either their primary care manager or another provider to whom the member is referred.

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5. We recognize that Tricare-Tidewater is an evolving program. Since the initiation of Tricare-Tidewater, DOD has developed a military-wide health care reform plan, also called Tricare. This plan, which we refer to as national Tricare, evolved to a great degree from the CHAMPUS Reform Initiative and the original concepts set forth in the Tidewater version of Tricare. The national plan is being implemented, at the regional level, in stages. The Tidewater, VA, area is part of region two and is expected to come on line with national Tricare in 1997.

The Tricare evaluation

Tasking

The Navy tasked CNA to design and implement an evaluation to determine Tricare's success in achieving its goals. The evaluation will cover several areas, including:

- Cost containment
- Use
- Beneficiary access and satisfaction
- Physician satisfaction
- Medical readiness
- Quality of care.

Evaluation design

To determine Tricare's effectiveness in achieving its goals, we will compare the program with other health care delivery plans currently offered within the military system. To isolate those changes attributable to Tricare, we will compare changes that occurred after the implementation of Tricare with changes that occurred in the military medical system at non-Tricare sites during the same time period. To accomplish this, we collected data in Tidewater and two comparison sites, southern California and North Carolina, *before* the start of Tricare. Roughly two years later, we are in the process of collecting followup data from these three sites. By comparing changes that occurred under Tricare to changes that occurred at the comparison sites, we can identify changes that occurred as a result of the Tricare program.

Data

We require a wide range of data to conduct these analyses. Existing data sources, such as administrative claims data, provide little—if any—information on beneficiary access, satisfaction, and health status or other personal characteristics that may influence health care

use. Therefore, it was necessary to survey a sample of beneficiaries from Tidewater and the comparison sites to collect this information. We fielded a baseline beneficiary survey at each site in the fall of 1992,[6] and we will field a followup survey in the winter of 1995. The survey asked beneficiaries about their satisfaction with, access to, and use of civilian and military health care, as well as questions about their health status.

To provide an analysis of cost containment under Tricare, we needed to supplement the survey data with administrative records. The Medical Expense and Performance Reporting System (MEPRS), Biometrics, and the CHAMPUS Quick Response Detail File (QRDF) claims data provided us not only with a wealth of cost information, but also detailed utilization records including information about specific diagnoses and treatments.

Concerns with self-reported utilization data

When we began to work with the baseline survey data, we discovered many inconsistencies with regard to self-reported use (see [3]). It is likely that respondents are better at reporting their attitudes and satisfaction with care than they are at reporting historical utilization information. The inconsistencies we observed raised questions about the validity of the survey responses with respect to measures of use. Therefore, we thought it was appropriate to attempt to validate the self-reported utilization data against the administrative records for survey respondents. We undertook this effort to determine—for the purposes of the Tricare evaluation—which source of data we should rely on when both survey and administrative data are available.[7]

We believe that verifying self-reported data against the available administrative data will affect how we look at other studies that rely

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6. For a discussion of the development and implementation of the baseline survey, see [1]. For a discussion of the sampling plan, see [2].

7. We currently have administrative data for MTF inpatient care (Biometrics) and for CHAMPUS inpatient and outpatient care (QRDF). The CHCS will provide administrative military outpatient data in the future.

on survey utilization data. For instance, Health Affairs uses a biannual survey to estimate the number of MHSS beneficiaries who use the system. This estimate is then used to compute a capitated budget. Other MHSS beneficiary surveys are being fielded to provide information for policy development, evaluation, and the monitoring of health care delivery across catchment areas.[8]

Scope of this analysis

In this paper, we compare the self-reported utilization data to the corresponding utilization data created from QRDF claims and Biometrics records for a subset of our survey respondents. We look at incidences of over- and underreporting of use and attempt to explain them.

We also explore the differences between survey and administrative data-based models of health care use. The survey data are rich in personal characteristics and health status variables but include only survey respondents.[9] Models using only the administrative data lack health and personal variables but include both respondents and nonrespondents.

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8. See [4] by Stephen C. Joseph, M.D., M.P.H., Assistant Secretary for Health Affairs, Department of Defense.

9. In survey data, there is always a possibility of nonresponse bias—bias that occurs when respondents differ from nonrespondents in some systematic way that affects the behavior being studied. The higher the response rate, the more likely it is that nonresponse is random and the resulting data are not biased. For the baseline, we had a response rate of 38 percent and a yield of 45 percent. This was below our 50-percent target. Therefore, we analyzed response rates for a subset of the sample (Portsmouth residents) to determine the reasons for nonresponse and to examine how well our respondents represent the population as a whole. Based on the metrics we could examine—using demographics and some health care use data—we found no evidence that our survey respondents were not representative of the population of interest. See [5] for more details.

Methods

In this section, we present a more detailed description of the survey and administrative data. We also discuss the measures of misreporting used in this analysis.

Data

We use administrative data to verify the self-reported utilization data collected from the survey. To limit the data requirements, we attempted to verify the survey responses using a subset of our sample. We compare the survey responses of beneficiaries living in the Portsmouth catchment area to the administrative data for that region.[10]

Survey data

The survey was fielded in the fall of 1992. This survey is presented in appendix A. For this analysis, the questions we focus on ask beneficiaries to recall their health care use for the 6-month period *before* answering the survey. Specifically, the survey asks how many times, in the last 6 months, the beneficiary received each of the following types of services:

- Phone advice
- Office/clinic visits
- Emergency room visits
- Nights in the hospital.

10. This subset of the data consists of the 1,809 survey respondents residing in the Portsmouth catchment area and includes Navy, Air Force, and Army beneficiaries. Also included are active duty and retirees, and their respective MHSS-eligible dependents.

The survey also asks whether each service received was provided by (a) a military, PRIMUS, or NAVCARE facility, (b) a VA hospital, or (c) a civilian facility.

Administrative data

Using Biometrics records and the QRDF claims, we constructed an administrative data set containing cost and utilization information for each survey respondent. We matched each respondent to the administrative data, by sponsor's social security number, gender, and year of birth.

To create an administrative data set that corresponds to the same time period covered by responses to the baseline survey, we used the date a person answered the survey to create a window of opportunity for eligible medical care. This window covers the 6-month period before answering the survey. From the administrative data, we collected information on visits with dates of care that fell within a person's unique 6-month window and information on admissions with end dates that fell within the window (see [6] for a detailed discussion of the administrative cost and utilization data, including categorizing care).

Limitations of the administrative data

Biometrics records and QRDF claims do not capture all the health care use of MHSS beneficiaries. Furthermore, to support our Tricare evaluation, we looked at data from five carefully selected catchment areas. Looking at this selective slice limited our ability to construct a complete utilization picture for our MHSS beneficiary sample.

Biometrics records

For example, while Biometrics records provide detailed diagnoses and treatment information for all MHSS beneficiary admissions to military hospitals (military admission), there are no computer records for MTF outpatient visits at the individual patient level. Because of a lack of administrative data, this analysis does not attempt to verify the accuracy of self-reported visits to military facilities. Additionally, we look only at admissions to military facilities that occur at the five east coast MTFs in our study: Naval Hospitals Portsmouth, Camp Lejeune, and Cherry Point; 1st Medical Group, Langley AFB; and McDonald Army

Community Hospital, Ft. Eustis. If a Portsmouth beneficiary were admitted to any other MTF, or perhaps received inpatient care while deployed, that admission would not be captured in our administrative data set.[11]

QRDF claims

When looking at care received by an MHSS beneficiary at a civilian facility (civilian care), we use QRDF claims. These data cover only civilian care for which the beneficiary filed a CHAMPUS claim. Therefore, we miss civilian care that was either not covered by CHAMPUS—such as civilian care received by a beneficiary 65 years of age or older—or care that was not filed with CHAMPUS for such reasons as:

- The beneficiary knew that the cost of care would not meet the CHAMPUS deductible or that the type of care received was not covered.
- The beneficiary was fully covered by another health policy through his or her employer or the spouse's employer.
- The beneficiary is confused or overwhelmed by CHAMPUS regulations and simply chooses not to file a claim for the care.

Finally, beneficiaries have up to 2 years to file a CHAMPUS claim for civilian care. Therefore, the QRDF data are not complete until the filing period has closed. For the Portsmouth catchment area, we found that over 90 percent of claims are filed and processed within 6 months of the date of care. Rather than wait the full 2 years for the billing cycle to be complete, we include only claims that are processed within 6 months of the date the care was received. We refer to this as the curing window. The 6-month curing window allows us to provide a timely analysis while ensuring consistency in utilization measures;

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11. To construct the data set for military health care utilization, we looked at Biometrics data for the nine MTFs in our evaluation. The data set was constructed to capture, for example, a beneficiary from the Langley catchment area who was admitted to Navy Hospital Portsmouth. Because of data processing limitations, the data were constructed to allow this overlap for beneficiaries and MTFs on the east coast and then separately account for overlap among those on the west coast. Therefore, we would not pick up an admission for a Langley beneficiary who was hospitalized at one of the southern California sites in our sample.

but, it also means that our administrative data set will not capture the care of those who filed claims, or whose claims were processed, more than 6 months after receiving care.

Measuring utilization misreporting

To verify the self-reported utilization data, we calculate rates of over- and underreporting, based on the administrative utilization data.

Definitions

Overreporting is defined as the percentage of survey respondents who said—on the survey—that they had received a particular type of care in the last 6 months (admission to a military hospital, civilian office or clinic visit, etc.) *but* have no "valid" administrative record that they received this care.[12] Analogously, we define *underreporting* as the percentage of survey respondents who had a valid administrative record of having received a particular type of care in the 6 months before answering the survey *but* had not said—on the survey—that they received that type of care.

We calculate these rates for:

- Nights spent in a civilian hospital[13]
- Nights spent in a military hospital
- Office/clinic or emergency room visits to a civilian facility.[14]

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12. Care is considered to be "valid," for our purposes, if there exists an administrative claim or record for care received by the survey respondent and that care was delivered within the 6-month window.

13. On the survey, we did not specifically ask about the number of admissions in the past 6 months. Instead, we asked how many nights a person had spent in the hospital. Therefore, we actually validate whether someone had at least one admission to a civilian or military hospital in a 6-month period, not the number of admissions.

14. We do not try to verify every visit a person had. Instead, we attempt to find at least one CHAMPUS outpatient visit claim for a person who claimed to have had one or more civilian office/clinic or emergency room visits. If a "valid" claim is found, he or she is considered an accurate reporter of his or her civilian visits.

Modifications for civilian care

Because our administrative utilization data use CHAMPUS claims to establish a civilian visit or admission, we know that anyone in our sample who is not eligible for CHAMPUS—active duty and beneficiaries age 65 or older—will not have a claim for any civilian care they may have received. This difference between the survey data and the administrative data should not be interpreted as overreporting on the part of the survey respondent. Therefore, when we calculate over- and underreporting for civilian care, we exclude from the calculation survey respondents who are ineligible for CHAMPUS.[15]

Types of overreporting

We believe that two types of overreporting occur: "true" overreporting and "data-mismatch." True overreporting includes instances of respondent recall error and general confusion regarding:

- The time care was received
- Who received care
- What kind of care was received.[16]

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15. For military care:

$$Overreporting = \frac{\text{\# who said yes on survey, but had no administrative record}}{\text{\# of survey respondents}}$$

For civilian care:

$$Overreporting = \frac{\text{\# who said yes on survey, but had no administrative record}}{\text{\# of CHAMPUS-eligible survey respondents}}$$

When CHAMPUS-ineligible respondents are excluded, the sample size is 1,033.

16. Survey responses indicated why respondents may have incorrectly reported their use. We asked several times if they had received care in the past 6 months. Inconsistent responses indicated that people may have had difficulty accurately recalling *when* they received health care. This is especially understandable when it comes to nonemergency outpatient visits. Also, we asked respondents to identify the type of services received at their last visit. In several cases, they indicated—in writing—that the care received was for a family member, not for themselves.

For example, a respondent might mistakenly report a visit or admission that occurred more than 6 month ago, or might report care obtained for a sick child or spouse. This type of overreporting poses serious problems because it undermines the accuracy of the self-reported data.

Instances of true overreporting should be distinguished from cases in which the respondent reports civilian or military care that is *legitimately* missing from the administrative data. This is what we call data-mismatch. Examples include cases of a person reporting that he or she had care, but:

- A claim for the civilian care was never filed with CHAMPUS
- The CHAMPUS claim was canceled or denied
- The CHAMPUS claim was filed and/or processed more than 6 months from the date the care was received
- The MTF care was received outside the catchment areas included in our sample.[17]

Cases of data-mismatch could be eliminated if we had administrative data on non-CHAMPUS civilian care and Biometrics records for all military facilities available to MHSS beneficiaries. Therefore, these inconsistencies do not represent a challenge to the veracity of the self-reported utilization data. Rather, they reflect differences in the scope of the survey data and our administrative data set.

17. For this analysis, out-of-region care includes any care received by Portsmouth beneficiaries at an MTF other than Naval Hospitals Portsmouth, Camp Lejeune, and Cherry Point; McDonald Army Hospital, Fort Eustis; or 1st Medical Group, Langley AFB.

Adjusting overreporting rates

Limitations of Biometrics records and QRDF claims data, and the selective slice that we use from these data, naturally lead to cases of data-mismatch. We attempt to control for this by calculating adjusted rates of overreporting. We do not adjust underreporting rates. We assume that the Biometrics and QRDF data are accurate[18] and that underreporting takes place primarily because of the person's inability to recall historical medical care with accuracy.

For those who claimed to have spent a night in a civilian or military hospital, but did not have a record of care in our administrative data set, we attempt to explain the discrepancy by looking at the survey data and all the QRDF claims and Biometrics records we have available. We matched these respondents' social security numbers to Biometrics records from the five east coast MTFs and Portsmouth QRDF claims. This gave us the administrative records for military care, and CHAMPUS-covered civilian care that was received by the respondents *and* any of their family members in FY 1992 and 1993.

We use these data to identify cases of data-mismatch. We can then adjust overreporting rates by excluding them from the numerator.[19]

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18. Though errors may be made when recording admissions in Biometrics or processing CHAMPUS claims, we believe they are minimal and, to the extent that these errors occur, we have no way to identify them.

19. We automatically excluded those ineligible for CHAMPUS from both the numerator and the denominator when calculating rates of overreporting for civilian care. Because they are not eligible for CHAMPUS, there is no way their civilian care could show up in our administrative data set and, therefore, no way for us to classify them as accurate or inaccurate reporters of their civilian care. But, for people who were eligible for CHAMPUS and who reported care identified to be a case of data-mismatch, we want to include them in the denominator but not in the numerator of the adjusted rate. They should be considered people who correctly reported their civilian health care on the survey.

Admissions to civilian hospitals

For any respondents who appeared to have overreported an admission to a civilian hospital, we can see if they:

1. Had a valid admission, but:
   a. The claim was processed outside the 6-month curing window, or
   b. The claim was canceled.
2. Had a valid same-day procedure, but did not spend the night in the hospital
3. Had an admission claim sometime in FY 1992 or 1993, but:
   a. The date of care was outside the person's unique 6-month window for eligible care, or
   b. The care was for a family member.

Those whose care falls into category 1a or 1b represent data-mismatching. Those whose care falls into either category 2, 3a, or 3b represent true overreporting. If a respondent's care does not fall into one of these categories, we then look to see if the survey can help to explain the overreporting.

From the survey, we determine if the respondents:

- Claimed to have had any other form of insurance
- Did not plan to file a CHAMPUS claim for civilian care because they did not meet the deductible, found the rules too confusing, and so on.

Although this survey information is not proof that these people did not file a CHAMPUS claim for the care they reported on the survey, we assume that they did not. And we classify their unverified care as data-mismatch rather than true overreporting.

Admissions to military facilities

For admissions to an MTF, cases of data-mismatch occur for only one reason—when a Portsmouth beneficiary was admitted to a military hospital other than the five included in our administrative data set. These cases cannot be identified with the administrative data that we have. Instead, we use the administrative data to help explain why someone may have reported having spent at least one night in a military hospital sometime in the last 6 months when it appears not to have happened. From these data, we can tell if a respondent:

1. Had a valid same-day procedure but did not spend the night in the hospital
2. Had an admission record sometime in FY 1992 or 1993, but:
   a. The date of care was outside the person's unique 6-month window for eligible care, or
   b. The care was for a family member.

As with admissions to civilian hospitals, we consider care that falls into one of these categories to be true overreporting—the person mistakenly reported same-day surgery as a night spent in the hospital, or he or she reported care received more than 6 months ago or received by a family member.

To account for out-of-region care, we use survey data to determine if those without Biometrics records for admissions they claimed to have had are active duty. For these active-duty personnel, we examine how much time they spent away from home due to assignments. This information gives us some indication of who would have been more likely to have actually received the care reported, but at an MTF outside our sample. Because this information is not proof that the care was actually received, we calculate three adjusted rates of overreporting based on three different assumptions regarding the likelihood that active-duty beneficiaries' unverified care reflects cases of data-mismatch rather than true overreporting.

We realize that non-active-duty beneficiaries in this sample may receive care at an MTF other than one of the five included in our east coast database, and that this care would not show up in our administrative

data set. But, we do not believe these cases are very likely. Therefore, we do not adjust for the possibility of non-active-duty data-mismatch.

Outpatient visits to civilian facilities

When it comes to visits, there are many more instances of inconsistencies between the survey and our administrative data. We try to give some explanation for the overreporting of outpatient visits, using survey data, but we do not explicitly adjust for cases of data-mismatch. We chose not to make this adjustment for visits because of the effort that would be required to pull and examine 2 years' worth of individual records for this number of respondents and all of their MHSS-eligible family members.

Results

Admissions

Table 1 presents the percentage of survey respondents who claimed that in the past 6 months they have spent at least one night—that is, had an admission—in either a civilian or a military hospital. The table also gives the rates of over- and underreporting for each type of admission.

Table 1. Respondents reporting and misreporting admissions[a]

Type	Number of respondents	Percentage of sample
Civilian hospital		
Total care reported	60	5.8[b]
Overreporting	34	3.3[b]
Underreporting	15	1.5[b]
Military hospital		
Total care reported	79	4.4[c]
Overreporting	40	2.2[c]
Underreporting	14	0.8[c]

a. Note: overreporting + underreporting ≠ total care reported.
b. Percentage of CHAMPUS-eligible respondents (N = 1,033).
c. Percentage of MHSS-eligible respondents (N = 1,809).

It appears that misreporting of admissions to civilian and military hospitals occurred with low frequency (e.g., 3.3 percent of CHAMPUS-eligible MHSS respondents overreported having had a civilian admission), but one must remember that we are calculating the rates that people over- and underreport fairly rare events.

In general, the military population is relatively young and healthy and does not require frequent hospitalization. Even looking at military retirees, the age distribution is younger than would be expected from examining civilian retirees. People can retire from the military with as few as 20 years of service, so retirees in our sample may be as young as 40. In many cases, spouses of retirees may be even younger.

Overreporting

We found that only 5.8 percent, or 60 of the 1,033 CHAMPUS-eligible respondents, reported staying in a civilian hospital, and only 26 of these respondents had QRDF claims to validate their care. Of the 1,809 MHSS-eligible respondents, 79 reported having a military admission (4.4 percent). Only 39 of them had Biometrics records for admissions in the appropriate 6-month period. Therefore, looking at overreporting in this context, we see that over half of those reporting nights in a civilian or military hospital—57 and 51 percent, respectively—may be reporting care that they did not receive.

Underreporting

Rates of underreporting for nights in the hospital (admissions) appear to be much lower than rates of overreporting. As stated before, there are several reasons why people may be falsely classified as overreporters (such as data limitations), but the estimates of underreporting are not subject to the same problems. We believe that they reflect "true" underreporting—those who were hospitalized in a civilian or military hospital, based on the existence of QRDF claims or Biometrics records, but reported that they received no such care.

Although only 0.8 percent of the MHSS-eligible respondents are classified as underreporting military admissions, they represent 26 percent of those who had a military admission. Analogously, 36.6 percent of the CHAMPUS-eligible respondents who spent a night in a civilian hospital did not report this care.

Possible explanations of overreporting and adjusted rates

We attempt to explain each instance of overreporting. Based on this information, we can classify each case as true overreporting or data-mismatch and adjust the overreporting rates.

Admissions to civilian hospitals

In table 2, we present the distribution of those who overreported an admission to a civilian hospital, by possible explanations. We believe that those who had a QRDF admission claim for themselves or a family member sometime in FY 1992 and 1993 are more than likely true overreporters. They have signaled themselves as CHAMPUS users—they know how to use the system—and 79 percent of them stated that they have no other insurance coverage. We also included five respondents, for whom we found no apparent explanation, as true overreporters.

Table 2. Distribution of those who overreported admissions to a civilian hospital by possible explanation

Possible explanation by type	No.	Source
True overreporting		
Reported admission that occurred outside 6-month window and/or was for a family member	8	QRDF[a]
Reported same-day procedure as night in hospital	6	QRDF[a]
Unexplained	5	
Total	19	
Data-mismatch		
Had valid admission, but claim was processed outside 6-month window or claim was canceled	3	QRDF
Did not file CHAMPUS claim because:	12	1992 Survey
• Had some other form of insurance		[b]
• Had not met CHAMPUS deductible		[c]
Total	15	

a. FY 1992 and FY 1993 CHAMPUS claims from the QRDF claims data.
b. Questions 39 and 39a.
c. Questions 24 and 24a.

To calculate an adjusted overreporting rate, we exclude the 15 persons whom we consider to have reported care that did not show up in our administrative data set, not because of misreporting but because of some limitation of the administrative data (cases of data-mismatch). This includes people whose admissions fell within the correct 6-month period before answering the survey but whose claims were processed more than 6 months later. It also includes those who claim to have other insurance and/or who specify why they did not plan to use CHAMPUS. After making these adjustments, the overreporting rate of civilian admissions falls from 3.3 percent to 1.8 percent.

Admissions to military facilities

Determining instances of data-mismatch for admissions to an MTF is a bit more difficult. In this case, data-mismatch occurs when someone reports an MTF admission, but he or she was treated at an MTF outside our sample area. Because we do not have Biometrics data for all MTFs, we cannot confirm whether this truly is the case or not.

We believe that, for non-active-duty beneficiaries, MTF admissions are unlikely to occur at facilities that are not included in our sample. Because of the presence of Naval Hospital Portsmouth, it would be unlikely that a Portsmouth catchment area retiree or dependent beneficiary would receive a referral for inpatient care to an MTF other than Portsmouth, Langley, or Eustis.[20] Therefore, we do not believe that referrals to outside facilities explain away overreporting. If non-active-duty beneficiaries are receiving care out of the area, it is more likely the case that:

- They required and were able to receive *emergency* inpatient care at an MTF while away from home, or
- "Snowbirds" received inpatient care while residing outside the area in the winter.

Only a small percentage of the non-active-duty workload at MTFs is accounted for by admissions of beneficiaries who are outside a

20. Naval Hospital Portsmouth is the largest GME naval facility on the east coast (in terms of hospital beds), and it provides the same specialty range as Bethesda, the next largest facility on the east coast.

facility's catchment area.[21] Also, only 1 of the 20 non-active-duty beneficiaries who overreported an MTF admission on the survey claimed to spend 1 month or more away from home in a typical year. Therefore, we believe it is more probable that these 20 respondents represent true overreporting.

We do adjust for the possibility that instances of data-mismatches occur among the active duty. Table 3 gives the distribution of those who overreported having a military admission, by possible explanations. Respondents are categorized by active-duty and non-active-duty status.

Table 3. Distribution of those who overreported admissions to a military facility by possible explanation

Possible explanation by active-duty status	No.	Source
Active duty		
Reported admission that occurred outside 6-month window	6	Biometrics[a]
Reported same-day procedure as night in hospital	1	Biometrics[a]
Reported utilization for family member	2	Biometrics[a]
Away from home on assignment for at least 2 weeks of 6-month period	5	1992 survey (question 46)
Unexplained	4	
Total	18	
Non-active duty		
Reported admission that occurred outside 6-month window	7	Biometrics[a]
Reported same-day procedure as night in hospital	2	Biometrics[a]
Reported utilization for family member	1	Biometrics[a]
Reported admission to civilian hospital	1	QRDF[b]
Unexplained	9	
Total	20	

a. FY 1992 and FY 1993 Biometrics records.
b. FY 1992 and FY 1993 CHAMPUS claims from QRDF claims data.

21. RAPS Utilization Report, Version 5.12 – 15 March 1994, reports that approximately 11 percent of non-active-duty MTF inpatient workload is provided to "non-local" beneficiaries. This includes any beneficiary living more than 40 miles from the facility delivering the inpatient care.

Because active-duty personnel can spend a great deal of time away from home on assignment, it is fairly likely that they may actually receive MTF inpatient care outside the region. This care, if reported on the survey, should be considered a case of data-mismatch. We cannot prove whether care was actually received outside of our sample of 5 MTFs, so we make several adjustments to the overreporting rate for MTF admissions. These adjustments are based on different assumptions regarding the probability that the unverified care reported by certain groups of active-duty personnel are really cases of data-mismatch. Table 4 presents these adjusted rates.

Table 4. Adjusted rates of overreporting of admission to military facilities based on alternative assumptions

Rate (percentage)	Assumption
1.8	Any case of overreported care by active duty away from home on assignment for at least 2 weeks of the 6-month period is a case of data-mismatch.
1.6	Any case of overreported care by active duty with no Biometrics records for FY 1992 or 1993 is a case of data-mismatch.
1.1	All cases of overreported care by active duty are cases of data-mismatch.

Our most conservative adjustment assumes that any active-duty respondent who appears to have overreported spending a night in a military hospital actually did have a military admission, but at a military hospital that is not in our sample. In other words, all cases of overreporting by active-duty respondents are considered to be cases of data-mismatch rather than true overreporting. Making adjustments to the overreporting rate for military admissions using this criterion, the rate falls from 2.2 to 1.1 percent. Adjustments based on less conservative assumptions yield overreporting rates of 1.6 to 1.8 percent.

Outpatient visits

Based on the data reported by the respondents, many more people had outpatient visits (office/clinic or emergency room visit) at a civilian facility than had admissions, as would be expected. Thirty-eight percent, or 394 CHAMPUS-eligible people, reported having at least one visit to a civilian facility (see table 5).

Table 5. Respondents reporting and misreporting visits to civilian facilities[a]

	Office/clinic or ER visit	
Type	Number of respondents	Percentage of sample[b]
Total care reported	394	38
Overreporting	180	17
Underreporting	130	13

a. Note: overreporting + underreporting ≠ total care reported.
b. Percentage of CHAMPUS-eligible respondents (N = 1,033).

Degree of misreporting

Also, as we might expect, the degree of misreporting is higher for visits than for admissions—17 percent overreporting and 13 percent underreporting. Though it is more difficult to explain how someone could forget being admitted to the hospital in the last 6 months, it is understandable that someone might forget the exact date of a routine or minor visit to a doctor's office. In fact, of the 394 CHAMPUS-eligible people who filed claims for visits, 33 percent failed to report their visits on the survey.

As with admissions, overreporting of visits is more frequent than underreporting. Forty-six percent of those who said they had a visit in the past 6 months had no CHAMPUS claim in our administrative data set. Some of this overreporting may be explained by data-mismatch.

Explaining overreporting

Instances of true overreporting and data-mismatch occur in the visits data, in the same way they did in the civilian admissions data. But, unlike an admission, it is difficult to pinpoint a single definition of what constitutes a visit. This definitional confusion may lead to additional cases of true overreporting of visits. For example, a respondent may call a laboratory test a separate visit.

Possible explanations for why overreporting may have occurred include:

- Did not file a CHAMPUS claim—110 claimed they had some other type of insurance
- Reported laboratory or other medical services as a visit—36 had CHAMPUS claims for nonvisit services in our administrative data set
- Misunderstood the question—25 claimed (elsewhere in the survey) not to have received civilian care of any kind in the past 6 months.

These explanations are not mutually exclusive; only 154 of the 180 who overreported visits fell into at least one of these categories. In addition, when we categorized cases of *admission* overreporting as true or data-mismatch, we prioritized explanations. We used administrative information as a first-priority explanation and relied on explanations from survey data only for those cases of overreporting that could not be categorized using the raw administrative data. However, because of the large number of respondents who overreported visits, and the complexity of QRDF outpatient administrative records, we did not pull and look at the records for these respondents and their family members. Therefore, we are unable to accurately identify and adjust the overreporting rate for visits for instances of data-mismatch.

Impact of misreporting

Our findings suggest that respondents both over- and underreported their health care utilization on the survey. Misreporting introduces both noise and potential bias, which pose serious problems for using these data at the individual level and, to a lesser extent, for aggregate analysis.

Aggregate analysis

Knowing the degree of over- and underreporting allows us to say something about the data's performance in the aggregate. Noise introduced by misreporting reduces estimate precision, and the level of noise increases directly with misreporting. The potential bias introduced by misreporting, however, may not necessarily be a severe problem for summary statistics because under- and overreporting tend to counterbalance in the aggregate. This is true for our data. As table 6 shows, the magnitude of overreporting is far greater than the magnitude of underreporting. But, when we adjust the admission overreporting rates for instances of data-mismatch, these differences diminish substantially.

Table 6. Rates (percentages) of misreporting by type of care

	Admissions		
Type of reporting	Civilian[a] hospital	Military[b] facility	Outpatient visits[a]
Overreporting	3.3	2.2	17
Adjusted overreporting[c]	1.8	1.1[d]	Not available
Underreporting	1.5	0.8	13

a. For CHAMPUS-eligible respondents (N = 1,033).
b. For MHSS-eligible respondents (N = 1,809).
c. Adjusted for instances of data-mismatch—reported care that is legitimately missing from our administrative data set.
d. We calculated three adjusted rates for military admissions. This is the most conservative assumption—assumes all unverified MTF admissions reported by active duty to be data-mismatches.

However, even after adjusting these rates, people are more likely to overreport than to underreport their level of health care use. Therefore, we should expect that any aggregate-level analysis we perform on the survey data may slightly overestimate use.

Individual-level analysis

How does the degree of misreporting affect our analysis of behavioral models? Can and should we use survey data to predict utilization based on personal characteristics? If misreporting is prevalent, can we be certain that personal characteristics, as opposed to reporting errors, are driving our findings?

To answer these questions, we looked at several variations of behavioral models, using different combinations of the survey and administrative data to see if there were significant differences in fit and performance.

Behavioral models

In the baseline paper on utilization [3], we developed models to predict the probability of receiving military or civilian care during the 6-month window, based on demographic characteristics. These models predict the probability of receiving a particular type of care, taking into consideration factors that are expected to influence the choice of care and the frequency of care received. In [3], we derived separate models for:

- Admissions to civilian hospitals
- Admissions to military facilities
- Outpatient visits to civilian facilities.[22]

We control for MHSS requirements and personal preferences by including status classifications among the independent variables. The independent variables include:

22. We also derived a model for military outpatient visits. See [3] for details on the development and estimation of each of these models.

- Demographic measures (e.g., age, gender)
- Health status measures (current, past, social, and mental)
- Status classifications (e.g., active duty, active-duty spouse).

These models are based on the abundance of health status and personal characteristics data available from the survey. But the information is available only for those who responded to the survey. In addition, we know that in many cases their reported utilization is incorrect.

An alternative would have been to use only administrative data to develop and estimate models of utilization behavior. One advantage is that these data are available for every person surveyed, not only those who responded. This would provide a larger sample—more data—and would ensure that we have a random sample of the population of interest. Another advantage is the increased precision of administrative utilization data. The disadvantage is that there is less information available from the data (e.g., no personal history, limited demographic information).

For this analysis, we estimated and compared these two models, as well as two additional variants. Table 7 specifies the four models. Appendix B contains the results of the estimation.

Table 7. Variations in models of utilization behavior

	Model 1	Model 2	Model 3	Model 4
Population[a]	Respondents only	Respondents only	Respondents only	Respondents and nonrespondents
Dependent variables measured by:[b]	Survey data	Admin. data	Admin. data	Admin. data
Independent variables measured by:	Survey data[c]	Survey data[c]	Admin. data[d]	Admin. data[d]

a. This analysis is done for the entire sample of nine catchment areas in the Tricare evaluation study. Respondents = 11,404, nonrespondents = 15,055.

b. Each model includes three separate equations: probability of having a military admission, a civilian admission, x number of civilian visits. The dependent, or left-hand side, variable in each of these equations is a measure of the type of care being predicted.

c. Survey variables include age, gender, region, sponsor status and relation to sponsor, race, household income, marital status, number of dependents, and measures of current, past, social, and mental health.

d. Independent variables from admin. data include age, gender, region, sponsor status, and relation to sponsor.

Essentially, we explored the value of substituting administrative data for our respondents for both dependent variable and independent variables. We also explored the increased sample size offered by using administrative data for both respondents and nonrespondents.

In comparing the models, we found little overall difference in significance and explanatory power. Given the high degree of misreporting in the survey data, one might have expected a positive impact from using more accurate measures of utilization derived from the administrative data. But, as discussed in [3], it is rather difficult to model health care use, because a hospital admission (and, to a lesser extent, a doctor visit) is a fairly rare and unexpected occurrence that is often generated by random events.[23]

For the population of survey respondents (N = 11,404), 97 percent reported no civilian admissions over a 6-month period, and 96 percent reported no military admissions. This lack of positive observations makes it difficult to derive a reasonable explanation of hospital use. Using the larger sample of 26,499 (in model 4) did not provide enough additional information to improve the fit of the model.

We did find that admissions and visits are strongly affected by the health status variables, as well as the additional demographic variables available from the survey data. This is true regardless of how we measure the dependent variables—either using the survey data or using the administrative data. In models 3 and 4, we find it difficult to interpret the estimated coefficients for the small number of independent variables included because so many critical explanatory variables, such as health status, are omitted.

23. Though outpatient visits occur with more frequency and would seem to be more predictable, when we look at a small slice in time, such as a 6-month period, it is very hard to predict who will have an outpatient visit. Even someone with a history of chronic illness may have a 6-month period free of doctor visits.

Conclusion

Even though survey data are essential for providing personal information regarding health status, and family and demographic information, there is some doubt as to whether we can rely on the population to report historical health care utilization accurately.

Through both careful evaluation of the survey and comparison of survey and administrative data, we have become seriously concerned with the veracity of the survey utilization data. The data may not accurately reflect respondents' use over a 6-month window for many reasons:

- People may have difficulty recalling the exact date of a doctor appointment.
- They may have a desire to be counted. Because hospitalization is a rare event, one may be tempted to report an admission that occurred 7 or 8 months ago.
- Inconsistent answers on the survey suggest that some respondents may have simply been confused by the survey's skip patterns or even an individual question.
- In confusion, respondents may have reported care for a family member not targeted by the survey.

This list is not exhaustive, but it gives some insight as to the numerous problems that can occur when we collect data through a mail survey.

The administrative data have their disadvantages as well. These data let us see only a slice of MHSS beneficiaries' health care use. But, while we miss some information, we know with a fair amount of certainty what we are missing and what we do have. Specifically, what we have captured with the administrative data is the utilization paid for by DOD, through either CHAMPUS or the direct health care system.

Another benefit of the administrative data is that we have consistent definitions of an admission, a visit, outpatient surgery, nonvisit services, and so on. Using survey data, we have to rely on each respondent's personal definition of these services. These may vary significantly, leaving us comparing apples with oranges.

Our analysis shows that respondents tend to overreport health care more often than they underreport. In the aggregate, therefore, the survey data may lead to an overestimate of use. Given this potential bias, and the lack of precision caused by misreporting, we have decided to use administrative measures of use in all aggregate analysis, whenever possible.[24]

Because health care utilization is a rare and unplanned event—more so for admissions than for outpatient visits—it is difficult to predict utilization behavior with great precision. And the behavioral models explain little of the variation regardless of which measures of use are used.[25] Therefore, it is not surprising that we found no overwhelming difference in the fit and performance of behavioral models when we measured health care utilization using administrative rather than survey data. We did, however, observe slight increases in the precision of the estimates when using dependent variables from administrative data. We also note that many of the survey variables—health status as well as additional demographic and personal characteristics—greatly enrich the models. Therefore, in all future work, we will measure utilization from the administrative data whenever possible, and rely on the survey data to provide a rich set of explanatory variables.

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24. Recall that there are no administrative records for MTF outpatient visits, nor are there data available for non-CHAMPUS civilian care. To say anything about these types of care, we will have to use the survey data.

25. Our explanatory power and significance of results generally mirror the effectiveness achieved for similar models by RAND [7] and IDA [8].

Appendix A: Health Care Evaluation Survey

Health Care Evaluation Survey

Adult Questionnaire

Agency Disclosure Notice

The military services are looking for ways to improve the delivery of your military health care benefits. Military hospitals in selected areas will soon offer, or may already offer, a new program to serve the health care needs of their communities. We need information about people's health, use of health care services, and their background to determine how to best structure the new program and evaluate its effectiveness.

To do this, we need to know more about health care for people everywhere, whether or not they are aware of, or participate in, the new program. That way, we can compare the effects of the new program with health care in other areas. If this program improves health care, military hospitals nationwide may offer a similar program.

To be sure this evaluation is complete, we need to know about health care for everyone selected to participate in the survey. That means we need YOUR help, regardless of where you live and whether you use military or civilian doctors.

Are you, the person named below, still eligible for care in the military health care system/CHAMPUS?

☐ **Yes**

♦ **Please turn to the next page for further instructions.**

☐ **No**

1. **Indicate why** _____
2. **Return this survey in the enclosed envelope. (postage is already paid)**

Thank you for taking part in this important study!

Statement of Confidentiality

Your participation in this study is voluntary. All information identifying you or your family will be regarded as strictly confidential. It will be used only for purposes of this study and will not be disclosed or released for any other purposes unless you agree beforehand in writing, except as required by law. The information you provide will be joined with other information about your use of military health services. Your information will be combined with that of other participants and reported only as statistics, totals, and averages. We are asking for personal information for purposes of combining your response with those of others with similar backgrounds.

Instructions:

1. The questionnaire should be completed by the person named on the cover. If necessary, someone else may help.
2. Please read each question carefully before you give your answer.
3. Answer the questions by CIRCLING the appropriate number (or numbers), or by WRITING IN the answer, as requested.
4. Please answer EVERY question, UNLESS you are asked to SKIP a question that doesn't apply to you. In that case, an instruction below the number you circled will tell you which question to answer next.
5. Carefully FOLLOW any instruction below your answer. If there is no instruction, go to the next question.
6. If you are unsure about how to answer a question, give the best answer you can and make a comment in the LEFT margin.
7. After you have completed the survey you may tear off the cover containing your identifying information.

Section 1: Your Health and Daily Activities

This part of the questionnaire is about your current health and daily activities.

Please answer every question as accurately as you can.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

1. In general, would you say your health is:

(Circle one number)

Excellent 1
Very good 2
Good 3
Fair 4
Poor 5

2. Does your health COMPLETELY keep you from working at a job, doing work around the house, or going to school?

(Circle one number)

Yes 1
No 2

3. Are you able to do just CERTAIN KINDS OR AMOUNTS of work, housework, or schoolwork BECAUSE OF YOUR HEALTH?

(Circle one number)

Yes 1
No 2

4. Does health limit you in any way from doing ANYTHING you want to do?

(Circle one number)

Yes 1
No 2

5. How TRUE or FALSE is each statement for you? Please answer by circling one number for EACH statement. There are no right or wrong answers.

(Circle one number on each line)

	Definitely True	Mostly True	Not Sure	Mostly False	Definitely False
a. I have never had an illness that lasted a long period of time	1	2	3	4	5
b. I have been feeling bad lately	1	2	3	4	5
c. I have never been seriously ill	1	2	3	4	5
d. I am somewhat ill	1	2	3	4	5
e. My health is excellent	1	2	3	4	5
f. I am as healthy as anybody I know	1	2	3	4	5
g. I was so sick once I thought I might die	1	2	3	4	5

6. How often during the PAST 4 WEEKS did you feel weighed down by your health problems? Was it . . .

(Circle one number)

All of the time 1
Most of the time 2
A good bit of the time 3
Some of the time 4
A little of the time 5
None of the time 6

7. How much bodily pain have you had during the PAST 4 WEEKS?

(Circle one number)

None 1
Very mild 2
Mild 3
Moderate 4
Severe 5

8. For EACH of the following questions, please circle the number for the ONE answer that comes CLOSEST to the way you have been feeling during the PAST MONTH.

How much of the time during the PAST MONTH . . .

(Circle one number on each line)

	All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
a. has your health limited your social activities (like visiting with friends or close relatives)?	1	2	3	4	5	6
b. have you been a very nervous person?	1	2	3	4	5	6
c. have you felt calm and peaceful?	1	2	3	4	5	6
d. have you felt downhearted and blue?	1	2	3	4	5	6
e. have you been a happy person?	1	2	3	4	5	6
f. have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6

9. Did you have any of the following medical conditions during the PAST 12 MONTHS? Please answer YES or NO for EACH condition.

During the PAST 12 MONTHS, did you have:

(Circle one number)

	Yes	No
a. Chronic bronchitis, asthma, emphysema, phlegm production, or other severe lung problems?	1	2
b. Chest pain, angina, heart attack, heart failure, or enlarged heart?	1	2
c. High blood pressure (hypertension), including taking medication for high blood pressure?	1	2
d. Varicose veins?	1	2
e. Hemorrhoids?	1	2
f. Diabetes or prediabetes (sugar in blood, sugar disease)?	1	2
g. Joint problems (including arthritis, gout, rheumatism)?	1	2
h. Back problems (including disc, spine, or hip impairments)?	1	2
i. Cancer (except skin cancer)?	1	2
j. Depression or other mental or psychiatric conditions?	1	2

9. (Continued.) Did you have any of the following medical conditions during the PAST 12 MONTHS? Please answer YES or NO for EACH condition.

During the PAST 12 MONTHS, did you have:	(Circle one number on each line) Yes	No
k. Hay fever or other allergies?	1	2
l. Severe overweight problem?	1	2
m. Trouble with alcohol or drugs?	1	2
n. Stomach "flu" or virus (gastroenteritis) with vomiting or diarrhea?	1	2
o. A sore throat or cold, with fever, lasting more than 3 days?	1	2
p. Frequent digestive upsets, stomach trouble, or intestinal trouble?	1	2
q. (MEN ONLY) Prostate trouble (such as difficulty urinating or frequent urination due to a prostate problem)?	1	2
r. (WOMEN ONLY) Menstrual troubles (such as irregular bleeding, bleeding between periods, chronic infection, or menopausal problems)?	1	2
s. Some other problem?	1	2

What other problem? _____

10. NOT COUNTING when you were sick or pregnant, when was the LAST TIME you had a general medical or physical examination or checkup?

(Circle one number)

- Within the past 12 months 1
- 1 to 2 years ago 2
- More than 2 but less than 3 years ago 3
- 3 years to less than 5 years ago 4
- 5 or more years ago 5
- Never had a general examination or check up 6

11. When did you LAST have a blood pressure reading?

(Circle one number)

- Within the past 12 months 1
- 1 to 2 years ago 2
- More than 2 but less than 3 years ago 3
- 3 years to less than 5 years ago 4
- 5 or more years ago 5
- Never had my blood pressure checked 6

12. When did you LAST have a rectal examination by a doctor?

(Circle one number)

Within the past 12 months	1
1 to 2 years ago	2
More than 2 but less than 3 years ago	3
3 years to less than 5 years ago	4
5 or more years ago	5
Never had a rectal examination	6

13. Are you:

(Circle one number)

A current cigarette smoker	1
An ex–cigarette smoker	2
Have never smoked cigarettes	3

14. Please circle the number that BEST describes how TRUE or FALSE EACH of the following statements is for you. There are no right or wrong answers.

(Circle one number on each line)

	Definitely True	Mostly True	Not Sure	Mostly False	Definitely False
a. If you wait long enough, you can get over almost any illness without seeing a doctor	1	2	3	4	5
b. Some home remedies are as good as the drugs that doctors give for curing illness	1	2	3	4	5
c. It doesn't bother me to go to the doctor	1	2	3	4	5
d. People understand their own health better than most doctors do	1	2	3	4	5

15. Please circle the number that applies to you and follow the instruction below your answer.

(Circle one number)

I am a female 1
(Continue with next question)

I am a male 2
(♦ Go to Section 2: Place of medical care, page 10)

16. When did you LAST have a routine female examination with a Pap smear?

(Circle one number)

Within the past 12 months 1
1 to 2 years ago 2
More than 2 but less than 3 years ago 3
3 years to less than 5 years ago 4
5 or more years ago 5
Never had a routine female exam with a Pap smear 6

17. When was the LAST time a doctor checked your breasts for lumps?

(Circle one number)

Within the past 12 months 1
1 to 2 years ago 2
More than 2 but less than 3 years ago 3
3 years to less than 5 years ago 4
5 or more years ago 5
Never been checked for lumps 6

18. When was the LAST time you had your breasts checked by mammography, thermography, or another X–ray like procedure?

(Circle one number)

Within the past 12 months 1
1 to 2 years ago 2
More than 2 but less than 3 years ago 3
3 years to less than 5 years ago 4
5 or more years ago 5
Never 6

19. Have you been pregnant in the PAST 12 MONTHS, or are you pregnant NOW?

(Circle one number)

Yes 1

(Continue with next question)

No 2

(♦ Go to Section 2: Place of Medical Care, next page)

19a. During the pregnancy you had within the past 12 months, or your current pregnancy, when did you FIRST begin receiving care for the pregnancy from a heath care professional?

(Circle one number)

During first 3 months 1

During second 3 months 2

During final 3 months 3

No care yet; am now less than 3 months pregnant 4

No care yet; am now between 3 and 6 months pregnant 5

No care yet; am now more than 6 months pregnant 6

No care before I delivered 7

Section 2: Place of Medical Care

This section is about where you go for YOUR OWN medical care.

EVERYONE please answer the next question and follow the instruction below the number you circled.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

20. Do you have any regular place (or places) you USUALLY go to when you are sick or want advice about YOUR OWN health?

(Circle one number)

Yes, I have at least one USUAL place 1
(Continue with next question)

No, I do NOT have any USUAL place 2
(♦ Go to Section 3: Use of Medical Care, next page)

20a. Which of these places do you USUALLY go to when you are sick or want advice about YOUR OWN health?

(Circle all that apply)

A military hospital emergency room 1
A military outpatient clinic at a hospital 2
A military outpatient clinic NOT at a hospital 3
A PRIMUS or NAVCARE clinic 4
A Veteran's Administration (VA) hospital outpatient clinic 5
A civilian doctor's office or outpatient clinic 6
A civilian hospital emergency room 7
A civilian hospital outpatient clinic 8
A civilian prepaid health plan or Health Maintenance Organization (HMO) 9
ANOTHER TYPE of place 10

What OTHER TYPE of place? (Include whether military or civilian.)

_____

_____

Section 3: Use of Medical Care

This section is about YOUR OWN medical visits to military and civilian doctors and the advice given to you by health care professionals.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

21. During the PAST 6 MONTHS, did you receive any health care services in the form of TELEPHONE ADVICE or a VISIT to a medical office or clinic, EMERGENCY ROOM VISIT or NIGHT in a hospital?

(Circle one number)

Yes 1
(Continue with next question)

No 2
(♦ Go to question 22, next page)

21a. HOW MANY times did you receive each of the kinds of care shown below?

(Write a number in each of the spaces below)
If zero, write "0"

Kind of Facility	Phone Advice	Office/Clinic Visits	Emergency Room Visits	Nights in Hospital
Military	____	____	____	____
VA	____	____	____	____
PRIMUS/NAVCARE	____	____	____	N/A
Civilian	____	____	____	____

Please continue with *next* question, top of next page ♦

22. During the PAST 6 MONTHS, did you receive medical care from a CIVILIAN health care professional or stay overnight in a CIVILIAN hospital or other civilian health care facility?

(Circle one number)

Yes 1

(Continue with next question)

No 2

(♦ Go to Section 4: Most Recent Medical Visit, page 14)

---

23. OTHER THAN CHAMPUS, did or will you use any of the following ways to help pay for ANY of the civilian medical care you received during the PAST SIX MONTHS? Please circle YES or NO for EACH line.

(Circle one number)

		Yes	No
a.	Some kind of health insurance	1	2
b.	My own or my family's money	1	2
c.	Another way	1	2

What other way?

_____

_____

---

24. Did or will you use CHAMPUS to help pay for ANY of the civilian medical care you received during the PAST SIX MONTHS?

(Circle one number)

Yes 1

(♦ Go to Section 4: Most Recent Medical Visit, page 14)

No 2

(Continue with next question)

24a. Why didn't or won't you use CHAMPUS to help pay for ANY of the civilian medical care you received during the PAST 6 MONTHS?

(Circle all that apply)

Was not eligible for CHAMPUS at time of care (includes those on Active Duty) 1

No charges for the medical care I received 2

Did not submit a statement of nonavailability before care was received 3

Takes too much paperwork 4

CHAMPUS deductible not met 5

CHAMPUS doesn't cover the type of care I received 6

Other insurance covers all or most of the charges 7

Payments from CHAMPUS take too long 8

CHAMPUS procedures for filing claims are too confusing 9

Some other reason 10

What other reason?

_____

_____

Section 4: Most Recent Medical Visit

These questions ask about the LAST VISIT you made to a health care professional for YOUR OWN health care.

EVERYONE please answer the first question and FOLLOW THE INSTRUCTION NEXT TO THE NUMBER YOU CIRCLED.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

25. When was your MOST RECENT MEDICAL VISIT for any reason? (DO NOT include medical visits you had during overnight stays in a hospital or other health care facility.)

(Circle one number)

Within the past month	1	**Continue with question 26**
1 to 3 months ago	2	
More than 3, but less than 6 months ago	3	
6 to 12 months ago	4	
More than 12 months ago	5	**◆ Go to Section 5: Access to Medical Care, page 18**

26. What was the main reason for your most recent medical visit?

(Circle one number)

First visit for an illness, injury, or condition	1
Follow–up visit for an existing illness, injury, or condition	2
A routine physical exam or check-up	3
Pregnancy	4
Prescription refill	5
X-ray or laboratory tests	6
Outpatient surgery	7
Some other reason	8

What other reason?

_____

_____

27a. What TYPE OF PLACE did you get your care from on your most recent medical visit?

(Circle one number)

A military hospital emergency room 1
A military outpatient clinic at a hospital 2
A military outpatient clinic NOT at a hospital 3
A PRIMUS or NAVCARE clinic 4
A Veterans Administration (VA) hospital outpatient clinic 5
A civilian doctor's office or outpatient clinic 6
A civilian hospital emergency room 7
A civilian hospital outpatient clinic 8
A civilian prepaid health plan or Health Maintenance Organization (HMO) 9
ANOTHER TYPE of place 10

What OTHER TYPE of place? (Include whether military or civilian.)

_____

_____

27b. Was this one of the places where you USUALLY go for care?

(Circle one number)

Yes 1
No 2

28. Did you first try to get care from a military source?

(Circle one number)

Yes 1
No 2

Please continue with *next* question, top of next page ▶

29. About how many phone calls did you make before you received the appointment for your most recent medical visit? (Include the times you received a busy signal.)

(Circle one number)

Made an appointment on my first call	1
Called 2 or 3 times	2
Called 4 or 5 times	3
Called 6 to 10 times	4
Called more than 10 times	5
Don't remember	6
Made an appointment in person	7
No appointment, just walked in	8

30. How many days passed from the day you made the appointment until the day of your most recent visit?

(Circle one number)

No appointment, was seen right away	1
Less than 1 day	2
Between 1 and 2 days	3
Between 3 and 4 days	4
Between 5 and 7 days	5
Between 8 and 14 days	6
More than 14 days	7

30a. On your most recent medical visit, how long did you have to wait to see the health care professional after arriving for your appointment?

(Circle one number)

Less than 15 minutes	1
15 to 30 minutes	2
31 to 45 minutes	3
46 to 60 minutes	4
More than 60 minutes	5

31. Still thinking about your MOST RECENT MEDICAL VISIT for your own health care, how satisfied were you with each of the following?

(Circle one number on each line)

	Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied	Somewhat Dissatisfied	Very Dissatisfied
a. The amount of time between the day you made an appointment and the day of your visit?	1	2	3	4	5
b. The amount of time it took you to get there?	1	2	3	4	5
c. The amount of time it took you to find a parking space?	1	2	3	4	5
d. The amount of time you had to wait to see the health care professional once there?	1	2	3	4	5
e. The amount of time the health care professional spent with you?	1	2	3	4	5
f. The information given to you about what was wrong with you, or about what was being done for you?	1	2	3	4	5
g. The dollar cost to you, if any, for the medical care received, that is, the cost NOT paid by insurance? (Please circle one answer, even if there was no cost to you.)	1	2	3	4	5
h. The quality of care you felt was provided at that visit?	1	2	3	4	5
i. This medical care visit overall?	1	2	3	4	5

Section 5: Access to Medical Care

Questions in this section are about getting medical care for yourself.

EVERYONE please answer EVERY question in this section unless an instruction tells you to skip a question.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

32. When you go for health care for YOURSELF, which kind of care do you USUALLY use? Do you usually use:

(Circle one number)

Military care only?	1
More military than civilian care?	2
Military and civilian care equally?	3
More civilian than military care?	4
Civilian care only?	5

33. How likely is it for you to use CHAMPUS to help pay the charges for your own CIVILIAN health care?

(Circle one number)

Very likely	1
Somewhat likely	2
Not very likely	3
Not at all likely	4
NOT ELIGIBLE FOR CHAMPUS (includes Active Duty)	5
NEVER USE CIVILIAN CARE	6

Please continue with *next* question, top of next page ➧

34. What type of hospital would you PREFER to go to if you had to be hospitalized in the near future?

(Circle one number)

Military hospital 1
Civilian hospital 2
Veterans Administration (VA) hospital 3
ANOTHER TYPE of hospital? 4

What OTHER TYPE of hospital?

_____

_____

35. Was there any time in the PAST 6 MONTHS when you felt you needed to go for medical care for YOURSELF, but didn't go, for some reason?

(Circle one number)

Yes 1
(Continue with next question)

No 2
(♦ Go to Section 6: Satisfaction with Medical Care, next page)

35a. What were the MAIN reasons you did not go for medical care for yourself when you felt you needed it?

(Circle all that apply)

Could not get an appointment 1
Didn't know a doctor or clinic to go to 2
It would cost too much 3
Too sick to go for care 4
Could not get off work 5
Could not find anyone to take care of child(ren) 6
Would wait too long in the doctor's office or clinic 7
There was no easy way to get to the doctor's office or clinic 8
Too nervous or afraid 9
Other reason 10

What other reason?

_____

_____

Section 6: Satisfaction with Medical Care

This section asks about how you feel about YOUR OWN medical care. (If you have not received care recently, think about what YOU would EXPECT, if you needed care today.)

EVERYONE please answer all questions in this section.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

36. We would like you to answer the questions in this section thinking about your satisfaction with the kind of medical care you are MOST FAMILIAR with. WHICH KIND of medical care will your answers refer to? (If both kinds of medical care are equally familiar, please choose one.)

(Circle one number)

MILITARY medical care 1
CIVILIAN medical care 2

37. Thinking about the kind of medical care with which you are most familiar, when you want to be seen by the same health care professional you've seen before, are you usually able to see this person?

(Circle one number)

Yes, USUALLY able to see the same heath care professional 1
No, USUALLY NOT able to see the same health care professional 2

Please continue with *next* question, top of next page ▶

38. Still thinking about the kind of medical care with which you are most familiar, how strongly do you AGREE or DISAGREE with EACH of the following statements?

(Circle one number on each line)

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
a. Doctors are good about explaining the reason for medical tests	1	2	3	4	5
b. I think my doctor's office has everything needed to provide complete medical care	1	2	3	4	5
c. The medical care I have been receiving is just about perfect	1	2	3	4	5
d. Sometimes doctors make me wonder if their diagnoses are correct	1	2	3	4	5
e. I feel confident that I can get the medical care I need without being set back financially	1	2	3	4	5
f. When I go for medical care, health care professionals are careful to check everything when treating and examining me	1	2	3	4	5
g. I have to pay for more of my medical care than I can afford	1	2	3	4	5
h. I have easy access to the medical specialists I need	1	2	3	4	5
i. Where I receive medical care, people have to wait too long for emergency treatment	1	2	3	4	5

Please continue with *next* question, top of next page ➧

38. (Continued.) Still thinking about the kind of medical care with which you are most familiar, how strongly do you AGREE or DISAGREE with EACH of the following statements?

(Circle one number on each line)

		Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
j.	Doctors act too businesslike and impersonal toward me	1	2	3	4	5
k.	My doctors treat me in a very friendly and courteous manner	1	2	3	4	5
l.	Those who provide my medical care sometimes hurry too much when they treat me	1	2	3	4	5
m.	Doctors sometimes ignore what I tell them	1	2	3	4	5
n.	I have some doubts about the ability of the doctors who treat me	1	2	3	4	5
o.	Doctors usually spend plenty of time with me	1	2	3	4	5
p.	I find it hard to get an appointment for medical care right away	1	2	3	4	5
q.	I am dissatisfied with some things about the medical care I receive	1	2	3	4	5
r.	I am able to get medical care whenever I need it	1	2	3	4	5

Section 7: Health Insurance

This section is about YOUR OWN health insurance and who pays for it.

EVERYONE please answer all questions in this section.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

39. Are you covered by health insurance OTHER THAN CHAMPUS?

(Circle one number)

Yes 1
(Continue with next question)

No 2
(♦ Go to Section 8: New Health Care Programs, next page)

39a. Who pays for this insurance?

(Circle all that apply)

	Myself or My Family	My Employer	My Spouse's Employer	Someone Else
a. CHAMPUS supplemental	1	2	3	4
b. MEDICARE	1	2	3	4
c. HMO or prepaid plan	1	2	3	4
d. Private (e.g., AETNA, Blue Cross) .	1	2	3	4
e. ANOTHER KIND of insurance	1	2	3	4

What OTHER KIND? _____

40. Have you ever participated in the following military-sponsored health care programs?

(Circle all that apply)

	Previously Participated	Currently Participating	Never Participated
a. CHAMPUS Prime	1	2	3
b. CHAMPUS Extra	1	2	3
c. U.S. Army Gateway	1	2	3
d. Health Care finder	1	2	3
e. CAM	1	2	3

Section 8: New Health Care Programs

These questions are about new health care programs offered by your local military hospital.

EVERYONE please answer ALL QUESTIONS in this section.

41. Your local MILITARY HOSPITAL may soon offer, or may already offer a new health care program. How much have you heard or read about the new program other than through this survey?

(Circle one number)

Quite a lot 1
Something 2
A little bit 3
Nothing 4

42. SUPPOSE your local military hospital offered you an option to enroll in a new health care program. If you enrolled, the program would help arrange for your health care. This would include care from your local and other military hospitals and from civilian hospitals and doctors. How likely are you to enroll in such a program for your OWN health care?

(Circle one number)

Already enrolled 1
Very likely to enroll 2
Somewhat likely to enroll 3
Not very likely to enroll 4
Definitely would not enroll 5

42a. What features of a health care program are most important to you and your family in choosing a program or place for your care?

Place a "1" beside the most important feature, a "2" beside the next most important feature, and so on for ALL (A through F) features.

	Feature	Relative Importance
a.	Hours of operation and location	_____
b.	Out-of-pocket expenses	_____
c.	Requirement to file insurance claims	_____
d.	Access to specialists	_____
e.	Staff's attitude toward patients	_____
f.	Availability of your own primary care (family practice, OB–GYN, pediatrics) physician	_____

Section 9: Military Service

These questions ask about your family's military background.

- If you belong to an ACTIVE DUTY family, please answer these questions about the active duty service member.
- If you belong to a RETIREE family, please answer these questions about the retired service member.

EVERYONE please answer EVERY question in this section.

43. Are you:

(Circle all that apply)

An active duty member? 1

The spouse of an active duty military member? 2

The spouse of a retired military member? 3

A retired military member? 4

44. How many years did the service member spend on active duty?

If one or more years completed:

How many years? _____

If LESS than one year completed:

How many months? _____

Please continue with *next* question, top of next page ➧

45. PAY GRADE OF SERVICE MEMBER: Please circle only ONE number, below. If ACTIVE DUTY, circle the number for current paygrade. If RETIRED, circle the number for pay grade AT TIME OF RETIREMENT. (If you are unsure, your best guess will do.)

(Circle one number)

E–1	01
E–2	02
E–3	03
E–4	04
E–5	05
E–6	06
E–7	07
E–8,9	08
W–1 to W–4	09
O–1	10
O–2	11
O–3	12
O–4	13
O–5	14
O–6	15
0–7 to 0–10	16
Not sure	17

46. During the PAST 6 MONTHS, how much of the time were you separated from your spouse due to assignment away from home? (If you are the spouse of a retired military member, or a retiree, circle '8' for DOES NOT APPLY).

(Circle one number)

None of the time	1
Less than 2 weeks	2
2 to 3 weeks	3
3 to 4 weeks	4
1 to 2 months	5
3 to 4 months	6
5 to 6 months	7
DOES NOT APPLY	8

47. Did the service member (sponsor) retire from the military during the PAST 12 MONTHS?

(Circle one number)

Yes 1

(Continue with next question)

No 2

(♦ Go to Section 10: You and Your Family, next page)

47a. When did the service member (sponsor) retire?

(Write in month and year of retirement:)

Month _____ / Year _____

Section 10: You and Your Family

These questions ask for some background information about you and your family.

EVERYONE answer every question in this section UNLESS an instruction tells you to skip a question.

REMINDER:
IF YOU ARE ANSWERING FOR THE PERSON NAMED ON THE COVER, PLEASE REMEMBER TO ANSWER ABOUT THAT PERSON AND NOT ABOUT YOURSELF.

48. When were you born?

Write in the date of YOUR BIRTH:

Month _____ / Day _____ / Year _____

49. How many persons now live in your household? Include yourself, spouse, children, and other dependents. (Please COUNT newborns, but DO NOT COUNT roomers or boarders.)

Write in number of persons: _____

50. How many CHILDREN age 21 AND UNDER now live in your household?

Write in number of children age 21 and under: _____

(Continue with next question)

If no child age 21 and under, check this box ..... ☐

(♦ Go to question 51, top of next page)

50a. For children age 21 AND UNDER now living in your household, please write in EACH child's age on his or her LAST birthday. For each child less than 1 year old, including newborns, write in "0" on the line.

On his or her LAST birthday:

1st child was _____ years old
2nd child was _____ years old
3rd child was _____ years old
4th child was _____ years old
5th child was _____ years old
6th child was _____ years old
7th child was _____ years old
8th child was _____ years old
9th child was _____ years old
10th child was _____ years old

EVERYONE please continue with question 51, below

51. Please write in the city, state, and zip-code where you now live.

PLEASE PRINT:

City: _____

State: _____

Zip code: _____

52. Are you:

(Circle one number)

White, not Hispanic 1
Black, not Hispanic 2
Hispanic 3
Asian or Pacific Islander 4
American Indian, or Alaskan Native 5
Other group 6
What other group? _____

53. What is the HIGHEST grade of regular school or college that you have COMPLETED?

(Circle one number)

Eighth grade or less 1
Some high school, but no diploma or equivalency 2
High school equivalency (GED) 3
High school diploma 4
Some college (or AA degree) but no Bachelor's degree 5
Bachelor's degree (BA, BS) 6
Some graduate school, but no degree 7
Advanced degree (MA, MS, PhD, LLD, MD) 8

54. Are you CURRENTLY working for pay, either for yourself or an employer?

(Please circle the ONE number that best fits your current work situation.)

(Circle one number)

Yes, 35 hours or more per week 1
Yes, 20 – 34 hours per week 2
Yes, fewer than 20 hours per week 3
No, not now working for pay 4
Other work situation 5
What? _____

55. How many years have you lived in this general area, that is, within 50 miles of your present address?

If one or more years in general area:

How many years? _____

If less than one year in general area:

How many months? _____

56. How much of the year do you USUALLY spend away from the general area where you now live?

(Circle one number)

No time away 1
Less than 1 month away 2
Between 1 and 3 months away 3
More than 3 but less than 6 months away 4
6 or more months away 5

57. WITHIN THE NEXT 12 MONTHS, do you think you will move PERMANENTLY to an area more than 50 miles away from your present address?

(Circle one number)

Yes 1
No 2
Not sure 3

58. About how many MILES away do you live from the CLOSEST military hospital/clinic (include NAVCARE or PRIMUS facility)?

Write in number of miles: _____

58a. About how many MINUTES does it take you by car to get to the CLOSEST military hospital/clinic (NAVCARE or PRIMUS facility)?

Write in number of minutes: _____

58b. About how many MILES away do you live from the place you usually get medical care?

Write in number of miles: _____

58c. About how many MINUTES does it take you by car to get to the place you usually get medical care?

Write in number of minutes: _____

EVERYONE please continue with question 59, BELOW

59. What was your family's TOTAL 1991 income (BEFORE taxes)? Please include all the income that you and your spouse earned in 1991, such as wages, salary, tips, interest, dividends, alimony, and pensions.

(Circle one number)

Less than $10,000	1
$10,000 to $19,999	2
$20,000 to $29,999	3
$30,000 to $39,999	4
$40,000 to $49,999	5
$50,000 to $74,999	6
$75,000 to $99,999	7
$100,000 and over	8

60. Who filled out this questionnaire?

(Circle one number)

Spouse of active duty military member 1
Spouse of retired military member 2
Retired military member 3
Active duty military member 4
Someone else 5
Who? _____

61. What is today's date?

(Write in today's date)

Month _____ / Day _____ / Year _____

Thank you for completing this questionnaire.

Now, please read the mailing instructions below:

- Please put this questionnaire in the CNA mailing envelope with your completed child questionnaire (if you received one for a child).
- Seal the envelope and mail it to CNA right away.
- No postage is necessary.

CNA
Post Office Box 16268
Alexandria, VA 22302–0268

Survey Control Number

Appendix B: Models of utilization behavior

Table 8. Probit results from estimating military admissions

	Model 1		Model 2		Model 3		Model 4	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	-1.076	(.226)[a]	-1.056	(.246)[a]	-1.066	(.236)[a]	-1.607	(.149)[a]
Age	-.047	(.009)[a]	-.066	(.009)[a]	-.058	(.009)[a]	-.036	(.006)[a]
Age squared	.0004	(.00009)[a]	.0007	(.00009)[a]	.0006	(.00009)[a]	.0004	(.00006)[a]
White	-.027	(.048)	.018	(.054)				
Female	.280	(.057)[a]	.328	(.064)[a]	.334	(.063)[a]	.423	(.044)[a]
Number in family	.083	(.018)[a]	.105	(.020)[a]				
Household income	-.132	(.055)[b]	-.209	(.063)[a]				
Married	.004	(.068)	-.073	(.075)				
North Carolina	-.057	(.060)	-.184	(.070)[a]	-.139	(.070)[b]	-.156	(.044)[a]
Southern California	.039	(.046)	.008	(.050)	.031	(.050)	.027	(.032)
Health status:[c]								
Current	-.209	(.021)[a]	-.191	(.023)[a]				
Past	-.118	(.021)[a]	-.089	(.023)[a]				
Social/work	-.035	(.019)	-.026	(.021)				
Mental	-.007	(.021)	-.013	(.022)				
Active duty	.307	(.093)[a]	.390	(.109)[a]	.356	(.106)[a]	.396	(.075)[a]
Active-duty spouse	.051	(.090)	.214	(.104)[b]	.276	(.100)[a]	.241	(.070)[a]
Log-likelihood	-2,066.2		-1,672.9		-1,622.1		-3,952.3	
Dependent/independent variables	survey/survey		admin./survey		admin./admin.		admin./admin.	
Sample size	11,404		11,404		11,404		26,499	
Population	respondents only		respondents only		respondents only		respondents and nonrespondents	

a. Significant at 0.01 level.
b. Significant at 0.05 level.
c. See [9] for details of derivation of the health status variables. These variables were normed at zero and scaled so that positive values represent better health.

Table 9. Probit results from estimating civilian admissions

	Model 1		Model 2		Model 3		Model 4	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	-.309	(.298)	-1.422	(.427)[a]	-1.432	(.411)[a]	-.993	(.251)[a]
Age	-.079	(.011)[a]	-.040	(.015)[a]	-.031	(.016)[b]	-.047	(.097)[a]
Age squared	.0008	(.0001)[a]	.0003	(.0002)	.0002	(.0002)	.0004	(.0001)[a]
White	.099	(.064)	.128	(.085)				
Female	.079	(.064)	.307	(.112)[a]	.433	(.141)[a]	.403	(.088)[a]
Number in family	.009	(.025)	.046	(.032)				
Household income	.229	(.058)[a]	.052	(.083)				
Married	.109	(.099)	.017	(.225)				
North Carolina	-.022	(.067)	-.046	(.090)	-1.277	(.306)[a]	-.166	(.061)[a]
Southern California	-.060	(.056)	-.155	(.078)[b]	-.120	(.078)	-.314	(.054)[a]
Health status:[c]								
Current	-.216	(.024)[a]	-.125	(.033)[a]				
Past	-.108	(.024)[a]	-.089	(.033)[a]				
Social/work	-.092	(.019)[a]	-.077	(.027)[a]				
Mental	-.045	(.023)[b]	-.014	(.032)[a]				
Active duty	-.682	(.125)[a]	-3.702	(39.30)	-3.677	(38.28)	-3.976	(37.24)
Active-duty spouse	-.086	(.105)	.038	(.130)	.039	(.143)	-.111	(.095)
Log-likelihood	-1,457.1		-753.93		-595.51		-1,561.9	
Dependent/independent variables	survey[d]/survey		admin.[e]/survey		admin.[e]/admin.		admin.[e]/admin.	
Sample size	11,404		11,404		11,404		26,499	
Population	respondents only		respondents only		respondents only		respondents and nonrespondents	

a. Significant at 0.01 level.
b. Significant at 0.05 level.
c. See [9] for details of derivation of the health status variables. These variables were normed at zero and scaled so that positive values represent better health.
d. The dependent variable in this model is a 0/1 variable that indicates whether a person reported that he or she spent at least one night in a civilian hospital. Therefore, it is a measure of all civilian admissions reported on the survey.
e. The dependent variable in this model is a 0/1 variable that indicates whether a person had a civilian admission that was filed with and processed by CHAMPUS less than 6 months after the end date of care. This variable does not measure all civilian admissions—only those that were paid for by CHAMPUS.

Table 10. Tobit results from estimating civilian outpatient visits

	Model 1		Model 2		Model 3		Model 4	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Constant	.949	(1.309)	-8.234	(.889)[a]	-6.849	(.899)[a]	-7.182	(.567)[a]
Age	-.314	(.049)[a]	.269	(.033)[a]	.204	(.034)[a]	.215	(.022)[a]
Age squared	.003	(.0005)[a]	-.003	(.0003)[a]	-.002	(.0004)[a]	-.003	(.0002)[a]
White	1.60	(.274)[a]	.632	(.162)[a]				
Female	1.35	(.263)[a]	1.36	(.173)[a]	1.546	(.193)[a]	1.636	(.141)[a]
Number in family	-.481	(.105)[a]	-.325	(.064)[a]				
Household income	2.90	(.245)[a]	.254	(.147)				
Married	1.065	(.393)[a]	.744	(.334)[b]				
North Carolina	-.446	(.288)	-1.043	(.170)[a]	-6.200	(.319)[a]	-1.589	(.133)[a]
Southern California	-.105	(.240)	-1.731	(.153)[a]	-1.758	(.158)[a]	-2.079	(.115)[a]
Health status:[c]								
Current	-1.773	(.107)[a]	-.974	(.064)[a]				
Past	-.684	(.104)[a]	-.453	(.062)[a]				
Social/work	-.309	(.097)[a]	-.185	(.056)[a]				
Mental	-.303	(.106)[a]	-.220	(.062)[a]				
Active duty	-8.043	(.497)[a]	-9.689	(.804)[a]	-10.706	(.930)[a]	-11.286	(.663)[a]
Active-duty spouse	-1.839	(.430)[a]	-.091	(.243)	-.504	(.264)[b]	-.979	(.182)[a]
Sigma	8.170	(.116)[a]	4.183	(.079)[a]	4.356	(.093)[a]	4.464	(.064)[a]
Log-likelihood	-13,230		-7,542.1		-6,287.2		-14,055	
Dependent/independent variables	survey[d]/survey		admin.[e]/survey		admin.[e]/admin.		admin.[e]/admin.	
Sample size	11,404		11,404		11,404		26,499	
Population	respondents only		respondents only		respondents only		respondents and nonrespondents	

a. Significant at 0.01 level.
b. Significant at 0.05 level.
c. See [9] for details of derivation of the health status variables. These variables were normed at zero and scaled so that positive values represent better health.
d. The dependent variable in this model measures the number of civilian outpatient visits a person reported on the survey. It is meant to capture all civilian care received by the respondents.
e. The dependent variable in this model measures, for each person, the number of civilian outpatient visits that were filed with and processed by CHAMPUS within 6 months of the date the visit occurred. This measure does not capture all civilian visits—only the slice that was paid for by CHAMPUS.

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